

Weather Glossary

ACID RAIN	Cloud or rain droplets containing pollutants or oxides of sulfur and nitrogen to make them acidic.
ADVECTION	The horizontal transport of air or atmospheric properties. Commonly used with temperatures and moisture (e.g., “warm air advection” or “moisture advection”).
ADVISORY	Issued for weather situations that cause significant inconveniences but do not meet warning criteria and, if caution is not exercised, could lead to situations that may threaten life and/or property.
AIR MASS	A large body of air having similar horizontal temperature and moisture characteristics.
AIR STAGNATION	A meteorological situation in which there is a major buildup of air pollution in the atmosphere. This usually occurs when the same air mass is parked over the same area for several days. During this time, the light winds cannot “cleanse” the buildup of smoke, dust, gases, and other industrial air pollution.
ALBERTA CLIPPER	A low-pressure system that moves out of southwest Canada and mainly affects the Plains, Midwest, and Great Lakes region. Usually accompanied by light snow, strong winds, and colder temperatures. Another variation of the same system is called a “Saskatchewan Screamer”.
ALTOCUMULUS	Mid-altitude clouds with a cumuliform shape.
ALTOSTRATUS	Mid-altitude clouds with a flat, sheet-like appearance.
ANEMOMETER	An instrument that measures wind speed.
ANTICYCLONE	A large area of high pressure around which the wind blows clockwise in the Northern Hemisphere.
ANVIL	A flat, elongated cloud formation at the top of a thunderstorm.
ASOS	Automated Surface Observing System. Observes sky condition, present weather, visibility, temperature and dew point, wind direction and speed, and barometric pressure. In the Paducah coverage area, ASOS takes observations at Cape Girardeau, Carbondale, Evansville, Paducah, and Poplar Bluff.
AVN	Aviation Model generated every 12 hours by NCEP.
AWIPS	Advanced Weather Interactive Processing System. State-of-the-art NWS computer system integrating automated weather observations, satellite imagery, radar data, and numerical model forecasts. Successor to AFOS.
BAROMETER	An instrument for measuring atmospheric pressure.
BLACK ICE	A glaze which forms on pavement or a blacktop surface and is nearly invisible to motorists. Because the ice is clear, it appears black on top of asphalt.
BLIZZARD	Snow or blowing snow with winds or frequent gusts to at least 35 mph, reducing visibility to ¼ mile or less for at least 3 hours.
BLOWING DUST	Wind-driven dust that significantly reduces surface visibility to less than 7 miles. Caused by winds blowing across dry ground with little or no foliage.
BLOWING SNOW	Wind-driven snow that significantly reduces surface visibility to less than 7 miles.
BOW ECHO	An accelerated portion of a squall line, taking on a bow configuration, created by strong downburst winds with the strongest winds near the apex of the bow.
BROKEN CLOUDS	Clouds which cover 5/8 to 7/8 of the sky.
CEILING	The height of the lowest layer of clouds when the sky is broken or overcast.
CHANCE	A 30, 40, or 50 percent probability of occurrence of measurable precipitation.

CIRROCUMULUS	Cirrus clouds with vertical development.
CIRROSTRATUS	Cirrus clouds with a flat, sheet-like appearance. Cirrostratus clouds often produce a halo around the sun or moon.
CIRRUS	High, wispy clouds, usually above 18,000 feet AGL, composed of ice crystals.
CLEAR	Sky condition of absolutely no cloudiness.
CLEAR ICE	See BLACK ICE .
CLIMATE	The historical record of average daily, monthly, and seasonal weather events.
COLD FRONT	The boundary between an advancing cold air mass and a relatively warmer air mass.
CONDENSATION	The process of gas changing to liquid.
CONVECTION	The vertical transport of air usually caused by rising air currents due to surface heating.
CORIOLIS FORCE	An apparent force caused by the rotation of the Earth. This apparent force explains why wind in the Northern Hemisphere is deflected to the right, and to the left in the Southern Hemisphere.
CUMULONIMBUS	A vertically developed cumulus cloud often capped by an anvil-shaped top. Also called a thunderstorm cloud, it is frequently accompanied by heavy showers, lightning, thunder, and sometimes hail or gusty wind.
CUMULUS CLOUD	A cloud in the shape of individual detached domes with a flat base and a billowy upper portion resembling cauliflower.
CUT-OFF LOW	An area of low pressure cut off from its associated jet stream.
CWA	County Warning Area. An area for which a National Weather Service office has warning responsibility. The Paducah CWA, CWFA, and FA are identical.
CWFA	County Warning & Forecast Area. An area for which a NWS office has warning and forecast responsibility. The Paducah CWFA covers 58 counties in Southwest Indiana, Southern Illinois, Southeast Missouri, and Western Kentucky. The Paducah CWA, CWFA, and FA are identical.
CYCLONE	An area of low pressure, with a closed circulation, around which the wind blows counterclockwise in the Northern Hemisphere. Also the term used for a hurricane in the Indian Ocean and the Western Pacific Ocean.
DEGREE-DAY (HEATING/COOLING)	Gages the amount of heating or cooling needed for a building using 65°F as a baseline. To compute heating/cooling degree-days, the average temperature is taken and referenced to a baseline of 65°F. An average temperature of 50°F yields 15 heating degree-days while an average of 75°F yields 10 cooling degree-days. Electrical, natural gas, power, heating, and air-conditioning industries use heating and cooling degree information to calculate their needs.
DEGREE-DAY (GROWING)	To compute growing degree-days, one would use various baseline references: 40° for canning purposes; 45° for potatoes; and 50° for sweet corn, snap beans, lima beans, tomatoes, grapes, and field corn. Every degree that the average temperature is above the baseline value is considered a growing degree-day. Agricultural-related interests use growing degree-days to determine planting times.
DEW	Water droplets that condense on objects on or near the ground whose temperatures have fallen to the dew-point temperature.
DEW POINT	The temperature to which air must be cooled, at constant pressure and moisture content, in order for saturation to occur (for water vapor to condense). Higher dew points indicate a greater amount of water vapor in the atmosphere. Dew points in the 70's make people feel uncomfortable.
DOC	Department of Commerce. The Executive department that oversees such organizations as NOAA, which heads the National Weather Service.

DOPPLER WEATHER RADAR	The Weather Surveillance Radar (WSR-88D) system implemented in 1988. About 120 systems have been installed at Weather Forecast Offices with 22 additional systems at Department of Defense sites (Air Force Bases). Doppler radar is a type of weather radar that determines whether atmospheric motion is toward or away from the radar and is useful in detecting rotation within a storm. It uses the Doppler effect to measure the velocity of particles suspended in the atmosphere. Surrounding the Paducah, KY Doppler radar are neighboring Doppler radars located at Fort Campbell, KY; Louisville, KY; Indianapolis, IN; Lincoln, IL; St. Louis, MO; Springfield, MO; Little Rock, AR; Memphis, TN; and Nashville, TN.
DOWNBURST	A severe, localized downdraft from a thunderstorm that includes an outburst of damaging winds on or near the ground. Downbursts may last for anywhere from a few minutes in small-scale microbursts on up to 20 minutes in larger, longer-lived macrobursts. A downburst can reach speeds of 110 to 150 mph.
DRIZZLE	Small, slowly falling water droplets with diameters between .2 and .5 millimeters. Drizzle usually falls from stratus clouds and is accompanied by low visibility and fog.
DRY LINE	A line that separates very warm, moist air flowing off the Gulf of Mexico to the east from hot, dry air flowing off the southwestern United States to the west. Severe weather can be associated with the dry line. It is also known as a “dew-point front” or “dry front”.
DUST DEVIL	A small, rapidly rotating wind that is made visible by the dust, dirt, or debris it picks up. Also called a whirlwind, it develops best on clear, dry, hot afternoons. Dust devils rarely cause damage and are usually found in desert areas.
ECMWF	European Center for Medium-Range Weather Forecasts. Also the name of a European numerical model generated every 24 hours.
EL NIÑO	A major warming of the equatorial waters in the Eastern Pacific Ocean. El Niño events usually occur every 3 to 7 years and are characterized by shifts in “normal” weather patterns. Prolonged periods of drought or floods may result in an active El Niño year.
ETA	“Eta” (from Greek) model generated every 12 hours by NCEP.
EVAPORATION	The process of a liquid changing to a gas.
EXCESSIVE HEAT	Heat indices equaling or exceeding 115°F for three hours or longer.
FA	Forecast Area. An area for which a National Weather Service office has forecast responsibility. The Paducah CWA, CWFA, and FA are identical.
FAN	Forecast statistics output from the AVN numerical model.
FEW CLOUDS	Sky condition when 1/8 to 2/8 of the sky is covered.
FLASH FLOOD	A flood that occurs within a few hours (usually less than six) due to heavy or excessive rainfall, a dam or levee failure, or after an ice jam breaks up. A flash flood may result in a rapid flow of water and is a threat to both life and property.
FLOOD	High flow, overflow, or inundation of a normally dry area which causes or threatens damage.
FLOOD STAGE	The level of a river or stream at which considerable inundation of surrounding areas will occur.
FLURRIES	Light snowfall of an intermittent nature that generally does not produce measurable accumulation.
FMR	Forecast statistics output from the MRF numerical model.
FOG	The visible aggregate of minute water droplets suspended in the atmosphere near the earth’s surface. Essentially a cloud whose base is at the earth’s surface, limiting visibility to less than 7 miles. Dense fog limits visibility to 5/8 mile or below.

FREEZING DRIZZLE	Drizzle which falls as liquid and then freezes upon impact with an object at or below 32°F, resulting in a coating of ice on exposed objects.
FREEZING LEVEL	The altitude in the atmosphere where the temperature equals 32°F.
FREEZING RAIN	Rain which falls as liquid and then freezes upon impact with an object at or below 32°F, resulting in a coating of ice on exposed objects.
FRONT	A boundary between two distinct air masses. The basic frontal types are cold fronts, warm fronts, stationary fronts, and occluded fronts.
FROST	A covering composed of small ice crystals that form on exposed surfaces whose temperature falls to the dew-point temperature and below freezing.
FUJITA SCALE	System developed by Dr. Theodore Fujita to classify tornadoes based on wind damage. Scale is from F0 for weakest to F6 for strongest tornadoes. See Appendix B for a table of the Fujita Scale.
FUNNEL CLOUD	A rotating, cone-shaped column of air extending downward from the base of a thunderstorm but not in contact with the ground. When it comes in contact with the ground, or if flying debris is observed, it is then classified a tornado.
GEOSTATIONARY SATELLITE	A satellite that rotates at the same rate as the earth, remaining over the same spot above the equator.
GREENHOUSE EFFECT	The warming of the atmosphere by the trapping of longwave radiation as it is radiated to space. The gases most responsible for this effect are water vapor and carbon dioxide.
GROUND FOG	Fog produced over land by the cooling of the lower atmosphere to the dew-point temperature. Also known as radiation fog.
GUST	A sudden, brief increase in wind speed. Generally the duration is less than 20 seconds and the fluctuation between peaks and lulls greater than 10 mph.
GUST FRONT	The leading edge of the downdraft from a thunderstorm which is marked by a sudden wind shift, sharply falling temperatures, and possibly heavy downpours of rain and/or hail.
GUSTNADO	A small tornado, usually weak and short-lived, that occurs along the gust front of a thunderstorm. Often it is visible only as a debris cloud or dust whirl near the ground. It is not associated with the storm-scale rotation found in severe thunderstorms. Although infrequent, gustnadoes may cause minor, localized damage and are extremely difficult to warn for.
HAIL	Convective precipitation in the form of balls or irregular lumps of ice. Hail, $\frac{3}{4}$ inch or larger in diameter, constitutes a severe thunderstorm. For a table of various hail sizes, see Appendix B.
HALO	A ring or arc that seems to encircle the sun or moon. It is caused by the refraction of light through the ice crystals in cirrus clouds.
HAZE	Fine particles of dust, smoke, salt, or water droplets suspended in the air that reduce visibility to less than 7 miles.
HEADLINE	Text placed at the beginning of a Zone Forecast or other product to highlight any watches, warnings, advisories, or other significant weather expected.
HEAT INDEX	An index that combines air temperature and humidity to give an apparent temperature (i.e., how hot it “feels”). See Appendix C for a heat index chart.
HEAVY SNOW	For the four-state region: 4” or more in 12 hours, or 6” or more in 24 hours.
HIGH	The center of an area of high pressure usually accompanied by anticyclonic and outward wind flow. Also known as an anticyclone.
HSA	Hydrologic Service Area. A composition of river basins for which a NWS office is responsible. The larger river basins in the Paducah HSA are the Ohio, Mississippi, Wabash, Little Wabash, Green, and White. Smaller river basins include the Patoka, Skillet Fork, Big Muddy, Black, Current, and St. Francis.
HUMIDITY	The actual amount of water vapor in the atmosphere. (See relative humidity).
HURRICANE	A dangerous tropical cyclone with highest sustained wind speeds of 74 mph (64 knots) or higher. Called a typhoon in the Western Pacific.

HYDROLOGY	The study of the transport of water and its effects on the earth and atmosphere.
ICE PELLETS	See SLEET.
ICE STORM	A freezing rain event that produces damaging ice accumulation of ¼ inch or greater.
INDIAN SUMMER	An unseasonably warm period near the middle of autumn, usually following a substantial period of cool weather with a heavy frost or freeze.
INSTABILITY (UNSTABLE AIR)	A state of the atmosphere in which the vertical distribution of temperature allows rising warm air to continue to rise and accelerate. This kind of motion is conducive to thunderstorm development.
INVERSION	An increase in temperature with height often caused by radiational cooling, subsidence, or both. The reverse of the normal cooling with height in the atmosphere.
ISOBAR	A line of equal barometric pressure on a weather map.
ISOTHERM	A line of constant temperature on a weather map.
JET STREAK	A concentrated region within the jet stream where the wind speeds are the strongest. The jet streak sets up unique wind currents in its vicinity that either enhance or diminish the likelihood of clouds and precipitation. The jet streak propagates downstream along the jet stream axis.
JET STREAM	Strong winds concentrated within a narrow band in the atmosphere. The jet stream often “steers” surface features such as fronts and low-pressure systems. It is usually found at 30,000 to 40,000 feet above the earth’s surface. Wind speeds can reach 200 mph or higher in narrow bands called “jet streaks”. The jet stream owes its existence to the large temperature contrast between the polar and equatorial regions.
KNOT	One nautical mile per hour. A unit of speed used in aviation and marine activities. (1 knot = 1.15 mph).
LAKE/LAND BREEZE	A lake breeze occurs when the prevailing wind blows off the water, while a land breeze indicates wind blowing from land to water. Both are caused by the difference in the surface temperature (differential heating) of the land and water. As a result, a lake breeze occurs during the day while a land breeze occurs at night.
LAKE-EFFECT SNOW (SQUALL)	A local, intense, narrow band of moderate to heavy snow that can extend long distances inland, persist for many hours, and may be accompanied by strong, gusty surface winds and possibly lightning. In the Great Lakes region, accumulations can be 6 inches or more in 12 hours or less. Although rare this far south, lake-effect snow has been observed downwind of Barkley and Kentucky Lakes.
LAPSE RATE	The amount of temperature change with altitude in the atmosphere.
LIGHTNING	An electrical discharge from a thunderstorm which results in a sudden vivid flash of energy and light.
LONG-FUSE WARNING	A warning that is of relatively long duration (e.g., Winter Storm, Excessive Heat, or Flood Warning).
LOW	The center of an area of low pressure usually accompanied by cyclonic and inward wind flow. Also known as a cyclone.
MACROBURST	A large downburst of damaging winds from a thunderstorm lasting 5 to 20 minutes over a diameter of at least 2.5 miles. An intense macroburst may cause tornado-force damage.
MEASURABLE	Precipitation of 0.01” or more.
MESOCYCLONE	The rotating updraft in a supercell thunderstorm.
METEOROLOGY	The study of the atmosphere and its associated phenomena.
MICROBURST	A strong, localized downdraft of winds from a thunderstorm lasting less than 5 minutes over a diameter less than 2.5 miles.

MILLIBAR (mb)	A unit of atmospheric pressure. Normal surface pressure is 1013.25 mb or 29.92 inches of mercury (in Hg).
MOS	Model Output Statistics based on the NGM numerical model.
MRF	Medium Range Forecast model generated every 24 hours by NCEP.
NAUTICAL MILE	A unit of distance used in aviation and marine activities, equal to 1.15 statute miles.
NCDC	National Climatic Data Center. Located in Asheville, NC, the agency that archives climatic and forecast data for the entire National Weather Service. (Phone: 828-271-4800)
NCEP	National Centers for Environmental Prediction (formerly NMC, the National Meteorological Center). Located in Silver Spring, MD, the agency responsible for disseminating numerical and manual forecast guidance. Houses such entities as the Hydrometeorological Prediction Center and the Climate Prediction Center.
NGM	Nested Grid Model generated every 12 hours by NCEP.
NOAA	National Oceanic and Atmospheric Administration. A branch of the U.S. Department of Commerce, NOAA is the parent organization of the National Weather Service.
NOAA WEATHER RADIO (NWR)	Continuous, 24-hour-a-day VHF broadcasts of weather observations and forecasts directly from National Weather Service offices. A special tone activates an alarm on certain receivers when watches or warnings are issued.
NOAA WEATHER WIRE (NWWS)	Mass dissemination via satellite of National Weather Service products to the media and public.
NOR'EASTER	A strong low-pressure system that affects the Middle Atlantic and New England States. It can form over land or over the coastal waters. It usually produces heavy snows, flooding rains, strong northeast winds, coastal flooding, and beach erosion.
OCCLUDED FRONT	A complex frontal system that occurs when a cold front overtakes a warm front. Also known as an occlusion or cold occlusion.
OROGRAPHIC UPLIFT	The vertical forcing of air by terrain features such as hills or mountains. If the air rises and cools sufficiently, orographic clouds and/or precipitation can result.
OUTFLOW	Air that flows outward from a thunderstorm.
OVERCAST	Sky condition when 8/8 of the sky is covered with clouds.
OVERSHOOTING TOP	A cloud dome forced above the anvil of a thunderstorm by a vigorous updraft within the storm.
OZONE	A nearly colorless (but faintly blue), gaseous form of oxygen containing three molecules of oxygen (O ₃), found primarily in the stratosphere and responsible for filtering out much of the sun's harmful ultraviolet radiation. In the stratosphere, ozone is beneficial; however, photochemical processes involving industrial/vehicle emissions can produce ozone near the ground where it can be harmful to people, especially those with respiratory or heart problems.
PANHANDLE HOOK	A low-pressure system that originates in the Panhandle region of Texas and Oklahoma, which initially moves east and then "hooks" or turns more northeast toward the upper Midwest or Great Lakes region. In winter, these systems usually deposit heavy snows north of their surface track, while thunderstorms may be found south of the track.
POLAR JET	The branch of the jet stream that is found in the middle and high latitudes.
POLAR-ORBITING SATELLITE	A satellite whose orbit nearly parallels the earth's lines of longitude and thus crosses the polar regions twice each day.
PRECIPITATION	Liquid or solid water molecules that fall from the atmosphere and reach the ground.

PRESSURE	The force exerted by the interaction of the atmosphere and gravity. Also known as atmospheric pressure.
RADAR	An instrument used to detect precipitation by measuring the strength of the electromagnetic signal reflected back from targets. RADAR stands for Radio Detection And Ranging.
RADIAL VELOCITY	The component of atmospheric motion directed parallel to (toward or away from) the Doppler radar's beam. Useful in locating atmospheric circulation.
RADIATION FOG	See GROUND FOG.
RADIATIONAL COOLING	The cooling of the earth's surface. At night, the earth suffers a net heat loss to space due to terrestrial cooling.
RADIOSONDE	An instrument attached to a weather balloon that transmits pressure, humidity, temperature, and wind data as it ascends. This data is used to analyze upper-air charts.
RAIN	Liquid water droplets that fall from the atmosphere, having diameters larger than drizzle. Indicates a nearly steady and uniform fall of liquid precipitation over an area for several hours, as opposed to the term <i>showers</i> , which implies intermittent and scattered precipitation of a more convective nature.
RAINBOW	Optical phenomena formed opposite the sun when sunlight is refracted and reflected by water droplets in the atmosphere into concentric arcs of color.
REFLECTIVITY	The amount of energy returned to the radar by atmospheric targets such as precipitation. In general, higher reflectivity corresponds to heavier precipitation.
RELATIVE HUMIDITY	The ratio of the amount of water vapor in the air to the amount the air could hold at the same temperature and pressure if it were completely saturated. (expressed as a percentage).
RFC	River Forecast Center. The river forecasts for the Paducah HSA come from three RFC's located in Wilmington, OH; Minneapolis, MN; and Slidell, LA.
RIDGE	An elongated area of high pressure in the atmosphere.
ROLL CLOUD	A turbulent cloud formation that resembles a roller. This cloud can be found in the lee of some mountains. The air in the cloud rotates around an axis parallel to the range of mountains. It is also sometimes found along the leading edge of a thunderstorm cloud and is formed by horizontal vorticity (or spin) in the wind-shear region between cool downdrafts and warm updrafts.
RUC	Rapid Update Cycle model generated every three hours by NCEP.
SATELLITE	A tool used to determine the character of cloud cover and moisture in the atmosphere. Meteorologists use Water Vapor (WV), Infrared (IR), and Visible (VIS) satellite images.
SCATTERED CLOUDS	Clouds that cover 3/8 to 4/8 of the sky.
SEVERE THUNDERSTORM	A thunderstorm with wind gusts of 58 mph (50 knots) or greater, 3/4" diameter hail or larger, and/or a tornado. Severe thunderstorms can result in the loss of life and property. For a table of various hail sizes or wind speed estimates, see Appendix B.
SHELF CLOUD	Long, wedge-shaped cloud associated with the gust front. Shelf clouds indicate the downdraft or outflow of a thunderstorm.
SHORT-FUSE WARNING	A warning that is of relatively short duration (e.g., Tornado, Severe Thunderstorm, or Flash Flood Warning).
SHOWER	Precipitation that is intermittent, in space, time, and/or intensity.
SKYWARN	A dedicated group of official NWS-trained storm spotters who aid the NWS mission of saving lives and reducing property loss. Essential to the warning process, these observers work in conjunction with local emergency officials to relay timely reports of severe weather and tornadoes to local forecast offices.

SLEET	A type of frozen precipitation consisting of small transparent ice pellets. Sleet forms by the freezing of raindrops or the refreezing of largely melted snowflakes as they encounter a deep layer of subfreezing air near the surface.
SNOW	Frozen precipitation composed of ice crystals in complex hexagonal patterns.
SNOW FLURRIES	See FLURRIES.
SNOWPACK	The combined layers of snow and ice on the ground at any one time. Also called the “snowcover”.
SNOW SHOWERS	Snow that starts and stops suddenly and is characterized by rapid changes in both intensity and visibility. Minor accumulation usually results.
SOUNDING	A graph showing the vertical profile of temperature, moisture, and wind at a particular site.
SOUTHERN OSCILLATION	A periodic, large-scale atmospheric oscillation of the overall distribution of sea-level pressure along with air and water temperature that originates over the Southern Hemisphere. Consequently, there is an associated change in the surface wind, and some storms become stronger than normal. This oscillation is on the scale of a year or two and has global implications such as widespread drought or flooding. Oceanic fishing is also disrupted.
SPC	Storm Prediction Center. A branch of NCEP situated in Norman, OK, this office is responsible for monitoring and forecasting severe convective weather, as well as winter weather, in the continental United States. This includes the issuance of Tornado and Severe Thunderstorm Watches.
SQUALL LINE	A broken or solid line of thunderstorms that may extend across several hundred miles along or ahead of an advancing cold front.
STABILITY (STABLE AIR)	The state of the atmosphere in which the vertical distribution of temperature prohibits the vertical movement of air. This type of atmosphere is not conducive to the formation of clouds or precipitation.
STATIONARY FRONT	A transition zone between air masses, with neither advancing upon the other.
STRAIGHT-LINE WINDS	Thunderstorm winds most often found with the gust front. They originate from downdrafts and can cause damage that occurs in a “straight line”, as opposed to tornadic wind damage which has circular characteristics.
STRATUS	Flat, gray, low-level clouds that usually cover most of the sky.
SUBSIDENCE	Sinking air that is associated with compressional warming and little cloud formation.
SUBTROPICAL JET	The branch of the jet stream that is found in the lower latitudes.
SUPERCCELL	A highly organized thunderstorm with a rotating updraft, known as a mesocyclone. A supercell poses an inordinately high threat to life and property, and it often produces large hail, strong winds, and tornadoes.
SUSTAINED WIND	The wind speed obtained by averaging the observed values over a one-minute period.
THERMAL	A small-scale rising current or bubble of air formed by surface heating. Thermals are a common source of low-level turbulence for aircraft.
THUNDER	The sound caused by a lightning stroke as it heats the air and causes it to rapidly expand and then contract.
THUNDERSTORM	A storm with lightning and thunder associated with a cumulonimbus cloud, usually producing gusty wind, heavy rain, and sometimes hail.
TORNADO	A violently rotating column of air in contact with the ground, usually extending from the base of a cumulonimbus cloud. A condensation funnel cloud need not be present, but flying debris near the ground should mark the tornado’s lower circulation. Tornadoes are classified into three main groups: <i>weak</i> —wind up to 110 mph; <i>strong</i> —wind 110 to 205 mph; <i>violent</i> —wind 205 to 318 mph.

TPC	Tropical Prediction Center (formerly NHC, the National Hurricane Center). Located in Miami, FL, the branch of NCEP responsible for tracking and forecasting tropical cyclones.
TRACE	Precipitation amount less than 0.01 inches. Considered non-measurable precipitation (e.g., flurries, drizzle, sprinkles).
TRADE WINDS	Persistent tropical winds that blow from the subtropical high-pressure centers towards the equatorial low.
TROPICAL CYCLONE	General term used for a cyclone originating over tropical or subtropical waters with organized convection and a definite cyclonic surface wind circulation.
TROPICAL DEPRESSION	An organized tropical mass of thunderstorms with a cyclonic wind circulation and maximum sustained winds between 20 and 33 knots (23 and 38 mph).
TROPICAL DISTURBANCE	An area of organized convection that originates in the tropics or subtropics and maintains its identity for 24 hours or more. It has a slight cyclonic circulation and winds less than 20 knots (23 mph). In successive stages of intensification, it may be subsequently classified as a tropical depression, tropical storm, or hurricane.
TROPICAL STORM	An organized tropical cyclone with maximum sustained winds between 34 and 63 knots (39 and 73 mph).
TROPICAL WAVE	A trough or cyclonic curvature maximum in the trade wind easterlies. It is not classified as a tropical cyclone.
TROUGH	An elongated area of low pressure at the surface or aloft.
TURBULENCE	Disrupted flow in the atmosphere that produces gusts and eddies.
UK	United Kingdom forecast model produced every 24 hours.
UNSTABLE	See INSTABILITY.
UPDRAFT	A rising current of warm, moist, unstable air into a thunderstorm.
UPPER-LEVEL DISTURBANCE	A disturbance in the flow pattern of the upper atmosphere, which is usually associated with clouds and precipitation. Distinct cyclonic flow, a pocket of cold air, and sometimes a jet streak characterize this disturbance. These features make the air aloft more unstable and conducive to clouds and precipitation.
URBAN & SMALL STREAM FLOOD	Flooding that occurs after heavy rains of relatively short duration and is generally not life threatening. Causes ponding of water in urban areas, especially in low places, and results in minor flooding of small streams and creeks.
VIRGA	Streaks of precipitation falling from the base of a cloud but evaporating before reaching the ground.
VISIBILITY	The horizontal distance an observer can see and identify a prominent object.
VORTICITY	A measure of the amount of “spin” (or rotation) at a particular location in the atmosphere.
WALL CLOUD	An isolated cloud lowering that is usually 1 to 4 miles in diameter and attached to the rain-free base of a cumulonimbus (thunderstorm) cloud. With respect to storm motion, the wall cloud is usually situated in the right-rear quadrant of the thunderstorm, below an intense updraft associated with a strong or severe thunderstorm. Rotating wall clouds often precede tornado development.
WARM FRONT	A boundary between a warm air mass that is replacing a cooler air mass.
WARNING	Forecast issued when a particular weather hazard is “imminent” or already occurring (e.g., Tornado Warning, Flash Flood Warning).
WARNING STAGE	The level of a river or stream that may cause minor flooding, and at which concerned interests should take action. Also called the Action Stage.
WATCH	Forecast issued in advance to alert the public of the possibility of a particular weather hazard (e.g., Tornado Watch, Flash Flood Watch). A watch is intended to give people time to prepare for the potential weather hazard.

WATERSPOUT	A column of violently rotating air, usually extending from a cumulus or cumulonimbus cloud, in contact with a body of water (i.e., a tornado over the water).
WAVE	An identifiable, periodic disturbance or motion in a medium that shows displacement. The most commonly referred medium is water, followed by the atmosphere, both which are “fluids”.
WET-BULB TEMPERATURE	The temperature an air parcel would have if cooled to saturation at a constant pressure by evaporation of water into the parcel.
WFO	Weather Forecast Office. Designation of NWS operational offices after acquisition of full-forecast responsibility and commissioning of AWIPS.
WIND-CHILL FACTOR	An apparent temperature that describes the combined effect of wind and low air temperature on exposed skin (i.e., the amount of cooling one “feels”). Refer to Appendix C for a wind-chill chart.
WIND SHEAR	The change of wind speed or direction with distance or height.
WIND VANE	An instrument that determines the direction from which the wind is blowing.
WSR-88D	Weather Surveillance Doppler Radar implemented in 1988. See DOPPLER WEATHER RADAR.